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ABSTRACT

In fall 1997, the Washington Scholarship Fund expanded its privately funded school voucher program in Washington, D.C., and in 1998, over 1,000 students were offered scholarships by lottery. This evaluation examined the impact of the first 2 years of the program on students who completed baseline testing and were in grades 1-7 in spring 1998. It estimated the program's impact on student test scores in reading, math, and combined achievement as well as other educational and social outcomes, as reported by parents and students. Overall, parents of students in private schools were much more satisfied with their children's schools. According to the parents who received scholarships, no child was refused admission to a preferred school for religious considerations. Home-school communications were much more extensive, classes were smaller, and students were expected to do more homework in private schools. Academic quality was the main reason public and private school parents chose their schools. Parents of students in public schools were much more likely than private school parents to report that their schools have a variety of special programs and facilities. Two years after changing schools, African American students of all ages attending private schools significantly outperformed their peers in combined reading and mathematics achievement. The adjustment problems experienced by older voucher students during the first year in private schools attenuated markedly. In general, individuals who used their scholarships came from more financially and educationally advantaged families than those who did not. (Contains 18 tables.) (SM)

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Results of a School Voucher Experiment:
The Case of Washington, D.C. After Two Years

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Results of a School Voucher Experiment: The Case of Washington, D.C. After Two Years (Executive Summary)

In the fall of 1997, the Washington Scholarship Fund (WSF) announced the expansion of a privately funded school voucher program in Washington, D.C. originally established in 1993. In the spring of 1998, over six thousand students from public and private schools applied to the new program; of these initial applicants, over one thousand were offered scholarships.

WSF awarded scholarships by lottery, thereby making it possible to conduct an evaluation designed as a randomized field trial. This evaluation examines the impact of the first two years of the WSF program on those students who completed the baseline testing, were attending public school, and were in grades 1-7 in the spring of 1998. The evaluation estimates the program's impact on student test scores in reading, math and combined achievement, as well as other educational and social outcomes, as reported by parents and students.

Key findings from the evaluation are as follows:

- The students who had switched to private school two years earlier were much more likely to provide tolerant responses to questions about civil liberties than were members of the control group. Forty-seven percent of the private-school students polled would permit a member of a group they dislike to live in their neighborhood, compared with just 26% of the public school students. Higher proportions of private-school students than public-school students would allow members of disliked groups to give a speech (34% vs. 18%) or run for president (37% vs. 20%).

- Eighty-one percent of private-school parents gave their child's school a grade of "A" or "B," as compared to 60 percent of public-school parents. None of the private-school parents graded their child's school "D" or "F," whereas 11 percent of public-school parents assigned their child's school such low ratings. The higher satisfaction of private-school parents than public school parents was most pronounced regarding the following school characteristics: amount of information from teachers, freedom to observe religious traditions, class size, safety, student respect for teachers, and the teaching of moral values.

- Private schools assign more homework than public schools, according to parent and student surveys. Private school students report an additional 24 minutes of homework assigned per day compared with their public school peers.

- Fighting appears to be a more significant problem in public schools, as 50 percent of the public-school parents describe fighting as a serious problem at their child's school compared with 26 percent of the private-school parents.

- Private-school parents were just as likely as the members of the control group to report that their child has a learning disability, a physical disability, or difficulty understanding English. Based on parental responses, the private schools in the study perform as well, or better, at meeting the special needs of these students.

- Parents report that public school enrollments are larger—an average of 434 students in public schools, as compared to 182 students in private schools.

- Parents report that class sizes are smaller in private schools—an average of 17 pupils per class, as compared to 23 in public school.

- Parents of students in public schools were much more likely than private-school parents to report that their school has a variety of special facilities and programs, including: special programs for non-English speakers, a nurse's office, prepared lunches, a cafeteria, special programs for advanced learners, arts programs, special education programs, a computer lab, and a gym.

- Nearly 75 percent of those offered a scholarship reported success in finding a school they preferred. By comparison, 57 percent of the parents in the control group said their children went to a desired school.

- None of the parents offered a scholarship reported that their child was refused admission to a preferred private school because of religious considerations. Less than one percent of private-school parents said that their child was asked not to return to his or her school in the coming year.

- Academic quality was the most common reason cited by both private and public-school parents for choosing their child's school. None of the parents listed the sports program or the child's friends as the main reason for selecting their school.

- Some critics have claimed that private schools will skim the "best and the brightest" of student applicants, refusing to admit students who face serious educational challenges. To observe whether this occurred in the District of Columbia, we compared the students who made use of the scholarship to those who did not. No educational skimming was observed among the younger students. There was no statistically significant difference in the educational performances of takers and decliners on the baseline reading or math tests of students entering grades three through six. However, takers in grades seven through nine had higher initial test scores than decliners.

- In some respects, individuals who used their scholarships came from more financially and educationally advantaged families. Specifically, scholarship takers had a slightly higher annual household income--an average of about $20,500, as compared to about $18,000 for scholarship decliners. Mothers of takers had four-tenths of a year more education, were less likely to be receiving government assistance or to have moved recently, and were more likely to have voted in the previous election. However, takers and decliners did not differ significantly in the likelihood that the mother was employed, married, or foreign born. Mothers who are Hispanic or Catholic were somewhat more likely to use the scholarship. Mothers who are African American or Baptist were somewhat more likely to decline it.

- As previously reported, African American students who switched to private schools scored 9 national percentile rank (NPR) points higher than their public school peers in combined math and reading achievement. That difference is statistically significant beyond the highest level commonly used by social scientists, $p < .01$. Ninety-three percent of those participating in the study in the second year (700 students) were African American.

- The difference in performance between the African American students who used the voucher and those in the control group averaged 10 NPR points in math and 8 NPR points in reading. Each of those differences, alone, is statistically significant.

- The achievement gains of the voucher users, relative to the control group, did not vary significantly between older and younger grade cohorts, as had been the case after one year.

- For the small group of non-African American students in the second year evaluation (53 students), no significant test score differences were observed between the voucher users and the members of the control group.

Operating for the first time on a large scale in 1997, WSF offered lottery winners annual scholarships of up to $1,700 to help pay tuition at a private elementary school for at least three years. To be eligible, families need to live in D.C. and have an income below 2.7 times the federal poverty line. For a family of four in 2000, 2.7 times the poverty line was $46,035. Telephone applications were received between October 1997 and March 1998. In response to invitations sent by WSF in the spring of 1998, applicants attended verification sessions where eligibility was determined, students were tested, older students filled out short questionnaires, and adult family members completed longer questionnaires. The lottery was held on April 29, 1998. Fifty-three percent of children offered a scholarship took the scholarship and used it to attend a private school. After two years, 38 percent of those originally offered a scholarship were still using it. The data reported in this paper are taken from student tests and responses from parents and students obtained at follow-up sessions in the spring of 2000. Slightly more than half of the families in the study attended the Year Two follow-up sessions.

It is too soon to ascertain the long-term impact of the voucher program sponsored by the Washington Scholarship Fund. Initial results, however, indicate that parents with students in private schools are much more satisfied with their child's school. School-parent communications are more extensive, and students are assigned more homework, in the private sector. After two years in private schools, African American students outperformed their public-school peers by 9 percentile points in combined math and reading, a statistically significant difference. The private-school students also demonstrated higher levels of political tolerance than did the members of the control group.

The evaluation of the Washington Scholarship Fund's voucher program in Washington, D.C. is an activity of the Harvard Program on Education Policy and Governance, which is jointly sponsored by the Taubman Center on State and Local Government, Kennedy School of Government, Harvard University and the Center for American Political Studies in the Faculty of

Arts and Sciences, Harvard University. It is being performed in collaboration with Georgetown University's Graduate Public Policy Institute. The conclusions expressed in this report are solely those of the authors.

Results of a School Voucher Experiment: The Case of Washington, D.C. After Two Years

In the past decade considerable data have been collected on how school vouchers impact low-to-moderate income families and their children.[1] Ten years ago, the information available about this widely debated question came primarily from one experimental public-school choice program attempted in Alum Rock, California during the 1970s.[2] But beginning in 1990, new voucher programs sprouted across the country, in such cities as Milwaukee, Dayton, Cleveland, Indianapolis, San Antonio, and New York City. Initially, studies of many of these programs were limited by the quality of the data or the research procedures employed. Often, planning for the evaluation began after the experiment was underway, making it impossible to gather baseline data or ensure the formation of an appropriate control group. As a result, the quality of the data collected was not as high as researchers normally would prefer.[3]

Despite their limitations, these early evaluations provided program operators and evaluation teams with valuable opportunities to learn the problems and pitfalls accompanying the study of school vouchers. Subsequent voucher programs in Dayton, New York City, and Washington, D.C. were designed in such a way as to allow for the collection of high-quality information about student test-score outcomes and parental assessments of public and private schools. Because scholarships in these cities were awarded by lottery, program evaluations could be designed as randomized field trials. Prior to conducting the lottery, the evaluation team collected baseline data on student test scores and family background characteristics. One year later, the evaluation team once again tested the students and asked parents about their children's school experiences.

Results from the evaluations in New York City and Dayton, Ohio, after two years, have been reported elsewhere.[4] This paper reports on the experiences of students and families

participating in a privately funded voucher program in Washington, D.C. after two years' involvement. The evaluation was designed as a randomized experiment. This report evaluates the experiences of families with students in grades 1-7 at baseline who previously had been attending public school. Specifically, the evaluation estimates the impact of the program on student test scores in reading and math (individually and combined) as well as other educational and social outcomes, as reported by parents and students.

Washington Scholarship Fund Pilot Program

A privately funded school voucher program, the Washington Scholarship Fund (WSF) pilot program, was established in 1993. At that time, 54 scholarships, which could be used at a private school of the family's choice, were offered to students from modest-income families. By the fall of 1997, WSF was serving approximately 460 children attending 72 private schools. WSF then received a large infusion of new funds from two philanthropists, and a major expansion of the program was announced in October 1997. Both general news announcements and paid advertising were used to publicize the enlarged school-choice scholarship program. WSF announced that, in the event that applications exceeded scholarship resources, winners would be chosen by lottery. The program expanded further in 1999 with support from the Children's Scholarship Fund, a nationwide scholarship program.

WSF provided recipients with annual scholarships of up to $1,700 to help pay the costs of tuition at a private elementary school. The maximum amount of tuition support for high school students was $2,200. WSF has said that it will attempt to continue tuition support to the children in its program for at least three years and, funds permitting, until they complete high school. No family with income more than 2.7 times the federal poverty line was eligible for support. For a family of four in 2000, 2.7 times the poverty line was $46,035. Families with incomes at or

below the poverty line ($17,500 in 2000) were awarded scholarships that equaled 60 percent of tuition, or $1,700, whichever was less. Families with income above the poverty line received smaller scholarships. To qualify, applicants also had to reside in Washington, D.C. and be entering grades K-8 in the fall of 1998.

Over 7,500 telephone applications to the program were received between October 1997 and March 1998; over 3,000 of these applicants responded to the WSF invitation to attend verification and testing sessions. Of the applicants who tested, 1,582 met the criteria for inclusion in the analysis. They all met the income and residency requirements for the program, were in grades 1-7, and were attending public school at the time of baseline testing. The lottery to select scholarship winners occurred on April 29, 1998. WSF awarded over one thousand new scholarships, with 811 going to students not previously in a private school.

Scholarship students could attend any private school in the Washington area, provided they gained admission. During the 1998-99 school year, students participating in the evaluation attended 72 different private schools. WSF made extensive efforts during the summer months of 1998 to inform scholarship recipients of private school options and provide additional assistance when needed in order to secure as many placements as possible.

Of those students offered scholarships in the spring of 1998, 53 percent made use of them to attend a private school during the following academic year, and 38 percent of them remained in a private school after two years. During the 1999-2000 academic year (the focus of this report), 71 percent of the students using scholarships and participating in the evaluation attended Catholic schools, 20 percent attended non-Catholic religious schools, 8 percent attended independent private schools, and the remainder attended unidentified private schools or were home schooled.

Of those who declined the scholarship offered to them and participated in the second year of the study, 72 percent attended a District of Columbia neighborhood school, 25 percent attended a charter school, and 3 percent attended a magnet school, education center, or public school outside of D.C.

Of the students in the control group, 70 percent reported attendance at a District of Columbia neighborhood public school, 18 percent at a public charter school, 2 percent at a magnet school, education center, or public school outside of D.C., 7 percent at a Catholic school, and 3 percent at another private school or home school.

The profile of the types of schools attended by the students in the study changed little from Year One to Year Two of the evaluation, with one important exception. During the 1998-1999 school year (the first year of the evaluation), only 9 percent of the decliner group and 12 percent of the control group reported attending public charter schools, which were new to Washington that year. In contrast, by the 1999-2000 school year, the proportion of students in the decliner and control groups who reported attending public charter schools had already doubled, reflecting the increasing availability and popularity of charter schools in D.C.

Evaluation Procedures

The procedures used to evaluate the WSF program conform to those used in randomized field trials in medical research. The evaluation team collected baseline data prior to the lottery, administered the lottery, and then collected follow-up information one and two years later. This section summarizes each of the steps in the data collection effort.

Baseline Data Collection

During the eligibility verification sessions, students took the Iowa Test of Basic Skills (ITBS) in reading and math. Students in kindergarten applying for a scholarship for first grade

were not tested at baseline, however. The sessions took place on Saturdays during February, March and April 1998 and generally lasted about two hours. The sessions were held at private schools, where students could take tests in a classroom setting. Private-school teachers and administrators proctored the exams under the overall supervision of the evaluation team. The tests were scored by Riverside Publishing, the producer of the ITBS.[5] Students in grades four through eight also completed a short questionnaire inquiring about their school experiences.

While children were being tested, adults accompanying them filled out surveys that asked about their satisfaction with their children's schools, their involvement in their children's education, and the parents' demographic characteristics. Parents completed these questionnaires in rooms separate from those used for testing. Administrators explained that responses to the questionnaire would be held in strict confidence and would be used for statistical purposes only. Respondents had considerable time to complete their surveys, and administrators were available to answer questions about the meaning of particular items.

Anticipating that a variety of people might accompany the children, questions were designed in such a way as to allow any caretaker familiar with the child's family and school experiences to respond to them. Although grandmothers and other relatives and guardians occasionally attended the sessions, parents completed 93 percent of the surveys. The remainder of the report, for ease of presentation, refers to survey responses as those of parents.

At baseline, 2,023 students were tested; 1,928 parent surveys asking questions about each child were completed; 938 surveys were completed by students in grades four and higher. Of the 2,023 students tested, 1,582 were attending a public school at the time of application for a scholarship; of the 1,928 parent questionnaires, 1,446 were completed by parents of public-

school students. Follow-up information was obtained only from families with children in public schools at the time of application.

The Lottery

The evaluation team conducted the lottery in late April 1998. WSF staff then informed lottery winners in early May. If a family was selected, all children in that family entering grades K-8 in the fall of 1998 were offered a scholarship. In order to ensure that an adequate number of scholarships were given to students not currently attending a private school, separate lotteries were held for students in public and private schools. This procedure also assured random assignment to test and control groups of those families participating in the evaluation, since attendance at a private school preceding the lottery would represent prior exposure to the treatment.

One of the conditions for participating in the lottery was agreement to participate in the data collection procedures. Although not all parents answered all questions in the surveys, a high percentage answered most, ensuring that baseline information would be available for nearly all students and parents.

Because scholarships were allocated by a lottery conducted by the evaluation team, those offered scholarships were not expected to differ significantly from members of the control group (those who did not win a scholarship). Baseline data confirm this expectation. There were no statistically significant differences in demographic characteristics between those offered scholarships and those who were not.[6] Nor were there significant differences in initial test scores of scholarship winners and losers. Baseline test scores of those entering grades two through eight in the fall of 1998 who were offered a scholarship averaged 30.4 National Percentile Rank

(NPR) points in reading and 23.8 in mathematics. Those not offered the scholarship averaged 30.3 NPR points in reading and 22.8 points in math.

Collection of Follow-up Information

To estimate the impact of attendance for slightly less than one year at a private school on students and families, the evaluation team collected follow-up information between February 27 and May 1, 1999. The results of an analysis of that first year of follow-up data were reported in March of 2000.[7] The second year of follow-up data collection took place between February 28 and April 15, 2000. The results from a complete examination of those data are reported here.

The procedures used to obtain follow-up data were essentially the same as those used to collect baseline data, except that data were collected only from students who had not been in private school at the time of the initial scholarship application. Students again took the ITBS in math and reading. Caretakers accompanying the child completed surveys that asked a wide range of questions about the educational experiences of each of their children. Students in grades four and higher also completed a questionnaire that asked them about their experiences at school. Testing and questionnaire administration procedures were similar to those that had been followed in the previous two years.

Since students required more time to finish their tests and questionnaire than parents needed to complete their own surveys, time was available for senior members of the evaluation team to conduct recorded by anonymous focus-group sessions with some parents. Participants in these interviews were selected at random from the attendance lists. Some parents accompanied by small children, however, could not participate, while other parents simply chose not to. Therefore, the focus group material was used to flesh out some of the key findings produced by

our more systematic data collection instruments (e.g. tests and surveys). The parental comments quoted in this report are taken from transcripts of these discussions.

To obtain a high participation rate in the follow-up data collection effort, decliners and members of the control group were both compensated for their expenses and told that they would automatically be included in a new lottery if they participated in the follow-up sessions. Follow-up test information was obtained from 63 percent of the students in 1999 and 50 percent in 2000. The response rates for the various surveys were similar to the test response rates. To adjust for non-response, baseline demographic and test score information was used to weight student test score results and parental survey responses.[8] However, such a weighting system can only correct for non-response differences across the groups on the demographic factors that were measured at baseline. It cannot adjust for any differential responses subsequent to the lottery, such as the possible greater response to follow-up sessions of students for whom the treatment is succeeding and the control situation (public schooling) is failing.[9] We are taking steps to ascertain the extent to which such differential response conditions are affecting our results, and to correct for them. Lacking such a correction, the results reported here should be considered preliminary.

Data Analysis and Reporting Procedures

This analysis of the data from the second year of the WSF program takes advantage of the fact that a lottery was used to award scholarships. As a result, it is possible to compare two groups of students that were similar, on average, at the start except that members of the control group were not offered a scholarship.

This report provides data that help answer two questions. The first question is as follows:

> What was the impact of the *offer* of a WSF scholarship to a group of low-income scholarship applicants, as measured by test scores and as perceived by applicants and their parents?

This question can be answered straightforwardly by comparing the responses of those who were offered a scholarship with the responses of the control group. Because scholarships were awarded at random, the two groups may be assumed to be, on average, identical, save the offer of a scholarship. Any differences between the two groups can be attributed to the offer of a scholarship, conditional on the absence of any significant follow-up response biases.

To compute program impacts on children's test scores, we estimated a statistical model that took into account students' scholarship or control-group status as well as baseline reading and math test scores. Baseline test scores were included to: 1) adjust for minor baseline differences between the treatment and control groups on the achievement tests; and 2) to increase the precision of the estimated impacts. To compute program impacts on parent and student survey outcomes, the same analytic approach was used, except that no adjustments were made for baseline test scores.

The answer to this first question is provided in columns one, two and three of Tables 3-18 in this report. Column one of these tables provides the responses of those offered a scholarship by WSF, column two provides responses of the control group, and column three is the estimate of the impact of an offer of a scholarship, which is the difference between columns one and two.

For some policy analysts, this first question is the most crucial: What happens when a school choice program is put into effect? How does the program impact the population of low-income families who were offered a school-choice scholarship? This query is similar to a question often asked in medical research: What will happen if a particular pill is marketed? How will the health of potential users be altered, whether or not all patients take the pill as prescribed?

This analytic strategy has certain methodological advantages because calculation of the impact of the scholarship offer is quite straightforward. However, it has the important

disadvantage of assuming that usage rates of scholarships are fixed when in fact they might be highly variable, depending upon the size of the scholarship, the time the scholarship is offered, and the marketing of the program as a whole. Also, if programmatic impacts are substantial, participation rates may increase with the passage of time.

For these reasons, most analysts also want an answer to a second question:

> What was the impact on low-income students in the first year of shifting from a public to a private school in the District of Columbia?

In medical research, the parallel question is: What are the consequences of actually taking a pill, as prescribed?

The answer to this second question requires a comparison between those attending a private school and a comparable control group attending a public school.[10] In Tables 3-17, therefore, column four provides the estimate of the responses for those students who still were attending a private school in the second year; column five reports an estimate of the responses for the appropriate control group of public-school students; and column six provides an estimate of the impact of attending a private school for two years, the difference between columns four and five.

To simplify the presentation, the text of this report will discuss, for the most part, the impact on students and families in the second year of the child's *attendance* at a private school, that is, the responses of those who attended private school for both years of the evaluation (column four), the appropriate control group (column five), and the differences between them, interpreted as the impact of attending a private school (column six). Readers who are interested primarily in the effect of an *offer* of a scholarship will want to examine the first three columns of the tables directly.

Response Bias

It is well known that people tend to overestimate their positive behaviors and underestimate their negative ones. We are more likely to report our smiles than our frowns, our vitamin than our fat intake, our minutes spent exercising than those spent sitting on the couch.

Students and parents are no different. Students are likely to overestimate the time spent on homework, and parents are likely to overestimate the frequency with which they volunteer at school. Parents may also view the school their child attends through rose-tinted glasses; after all, few responsible parents are likely to admit to themselves or to others that they are sending their child to a failing school.

The interpretation of data from the parental and student surveys needs to take into account this very human tendency. No special weight should be placed on the actual frequency with which any particular type of event is said to occur. But if absolute levels may not be estimated accurately, there is no reason to believe that the two groups of parents—scholarship recipients and members of the control group—differ in the accuracy of their reports. After all, individuals were assigned randomly to the two groups, and any reporting bias generally should be similar for the two groups. Thus, this report, for the most part, emphasizes differences between groups rather than the absolute value of responses reported by either scholarship recipients or members of the control group.

An additional important qualification is in order. One must qualify any generalizations from the results of this pilot program to a large-scale voucher program that would involve all children in the District of Columbia. Only a small fraction of students in Washington public schools were offered scholarships, and these scholarship students constituted only a small proportion of the students attending private schools in the District of Columbia. Moreover, the

population that we study here is self-selected and may disproportionately include the kinds of modest-income D.C. families who would most benefit from access to private schools. A much larger program could conceivably have quite different program outcomes for members of both the treatment and control groups.

Still, slightly larger voucher programs directed at low-to-moderate income families initially will attract those families with the greatest interest in exploring an educational alternative, exactly the group that applied for a WSF scholarship. Thus, positive consequences of school choice reported herein may prove encouraging to those who seek to extend and expand school choices for modest-income, inner-city families, and negative findings indicate some of the problems associated with doing so. It is hoped that additional careful research will accompany larger programs established by private philanthropists and/or public authorities.

Participation in Scholarship Program

An important issue in the school choice debate concerns the ability of different families to take advantage of scholarship programs. Some school choice critics have argued that vouchers will only serve the better off. In the words of educational sociologist Amy Wells, "White and higher-SES [socio-economic status] families will no doubt be in a position to take greater advantage of the educational market."[11] The president of the American Federation of Teachers (AFT), Sandra Feldman, has claimed that vouchers for private schools take "money away from inner city schools so a few selected children can get vouchers to attend private schools, while the majority of equally deserving kids, who remain in the public schools, are ignored."[12] Evaluations of school-choice scholarship programs in Cleveland, New York City, and San Antonio, however, indicate that private schools readily admit members of economically and socially disadvantaged groups.[13] Moreover, the rules that govern the qualifications for and

the operation of specific school voucher programs can be structured to minimize the likelihood of "creaming."

Information bearing on the question of creaming can be obtained by comparing the educational characteristics of those in Washington who made use of the scholarship offer for both years of the evaluation (the takers) with those who did not (the decliners). As can be seen in Table 1, in some respects, the takers and decliners did not differ significantly. Taker parents were just as likely as decliner parents to report that their child has difficulty understanding English or a physical disability, although they were somewhat less likely to report that their child has a learning disability. No statistically significant differences are observed in the baseline math and reading scores attained by the younger takers and decliners (who were projected to be in grades 3-6 in 2000). However, older takers in grades 7-9 had higher initial reading and math test scores than did the older decliners. Test score differences in the two subject areas were 11 and 10 NPR points, respectively. Test scores and whether or not a child had a learning disability, however, had no clear effect on whether or not parents of either older or younger students said the student had been denied admission to a private school.

If these reports are accurate, then the difference in test scores between the takers and decliners in the older cohort of students appears to be the result of parental decisions, with parents of older children with higher test-scores more likely to accept and use the scholarships, and not due to private school admissions requirements. Since not all private schools have special programs for children with learning disabilities, the slightly lower voucher take-up rates for children with learning disabilities may be due to the greater challenge that parents face in locating such schools. This point was brought home by a focus group exchange between two parents of learning disabled children, one who felt that she had no choice but to keep her special-

needs child in public school and the other who found a private school that could accommodate her learning disabled child.

Parent 1: ...the reason why I wouldn't send [my second child] to...private school is because he had a discipline area and I was trying to find a private school that would take...special ed, but I haven't been successful yet, so I'll continue splitting both of them up...

Parent 2: My son also has a learning disability, but they [a Catholic school] have a Chapter 1 program down there with a very good teacher who keeps him up on grade level. She works with his teacher so he does the work in the classroom and then she follows up with it in the Chapter 1 program he goes to twice a week... and my son is progressing better. He's so excited. He can read now...[14]

Still, one might argue that the effect of the selectivity is the same. Even if it is the result of parental decisions, the group of students who are choosing to switch to private school are somewhat less likely to be labeled learning disabled and, for the older cohort, somewhat more able academically than the group that is choosing to remain in public school.

Table 2 reports differences in the demographic characteristics of takers and decliners. In some respects, the two groups are quite similar. No statistically significant differences between takers and decliners were reported in the employment or marital status of mothers, the likelihood that the mother was born in the U.S., or the likelihood that a member of the household was incarcerated during the previous year. However, those who declined the scholarship did have somewhat lower household annual incomes, an average of over $18,000 as compared to an average of nearly $20,500 for those using the scholarship. Decliners were also somewhat more likely than takers to be recipients of benefits from government assistance programs, including food stamps, TANF (welfare), housing vouchers and Supplemental Security Income. Mothers of takers were also likely to have had, on average, an additional four-tenths of a year of education. Decliner families were more likely to have changed residences recently, as 30 percent of decliner families said they had moved within the past two years as opposed to just 17 percent of taker

families. Takers were somewhat more likely to be Hispanic and somewhat less likely to be African American than were decliners. Taker families were somewhat less likely to be Baptist, and somewhat more likely to be Roman Catholic. Taker families were just as likely as decliner families to profess no particular religion. As explained above, the estimated effects of attending a private school we present in the remainder of this report are adjusted to reflect these initial differences between takers and decliners.

Selecting a School

Critics of school choice often disagree with choice proponents about the relative importance of academic considerations in parents' decisions regarding their child's education. They assert that most parents choosing to send their child to a private school are more concerned with a school's location, its sports programs, or the religious instruction it offers than with the quality of the academic program. The Carnegie Foundation for the Advancement of Teaching, for example, has claimed that "when parents do select another school, academic concerns are often not central to the decision."[15] A Twentieth Century Fund report argues that "few parents of any social class appear willing to acquire the information necessary to make active and informed educational choices," proceeding to suggest that this problem is particularly acute among low-income parents, who are not "natural 'consumers' of education."[16]

Supporters of school choice dispute such contentions, arguing that low-income parents, like other parents, generally place the highest priority on educational quality. Recent research by Terry Moe demonstrates that low-income parents with children in public schools who express a desire to move to a private school are motivated primarily by their conception of the quality of academic instruction available in the two sectors.[17] His evidence, drawn from a national sample, suggests that the widespread belief that the decisions made by low-income parents would be

driven by predominantly non-academic considerations is misguided. The responses given by participants in the WSF program when asked about their choice of school are wholly consistent with Moe's more general findings.

To determine how Washington parents selected a school, they were asked to identify from a long list the most important reason for selecting the school their child was currently attending. Parents were also given the option of saying the school selected "was the only choice available." As can be seen in Table 3, the most frequently mentioned reason for selecting a school given by parents of students in both private and public schools was the school's academic quality, mentioned by over 47 percent of the private-school parents and nearly 35 percent of the public-school parents. The next most commonly cited reason for school selection—that the school was "the only choice available"—was given by just 8 percent of private-school and 16 percent of public-school parents. The remaining responses were scattered widely over a large list of reasons. None of the private-school parents mentioned extra-curricular activities, the sports program, or children's friendships as the most important reason for selecting their child's school.

A number of parents who participated in our focus group discussions underlined the importance of academic considerations to their efforts to obtain a private school education for their children. This response of a parent who used a voucher to switch her child from public to private school was typical:

Parent: [Public school] teachers from the fourth grade up, they just didn't have a handle on the kids...we didn't have language and some of the other foreign languages and the things that we're getting now [in private school]...and the computer labs, the art and things of this nature or science which I think is very important.

Moderator: They didn't have science in the public school?

Parent: That's right. On the first day of classes, the science teacher walked out and the principal said that science was not considered a core subject, so when the principal said that science and foreign language are not core subjects, what does that tell you? It tells you that she's not interested in our kids...so I made up my mind that the following year they would be gone and I was thankful that the scholarship was here. So far the kids have benefited and they have said so.[18]

Obtaining the School of Choice

Still another component of the school-choice debate concerns the ability of low-income families to gain access to the private sector. School-choice critics have said that private schools will construct academic and financial barriers to prevent parents from obtaining the school of their choice. In the view of Bruce Fuller and his colleagues, for example, the choice often belongs to the school, not the parent.[19]

Evidence from the WSF voucher program should partially alleviate these concerns. Despite the fact that the scholarships families received covered only a portion of tuition and fees, and private schools were not required to accept all applicants, nearly 75 percent of the families who were offered vouchers, and 98 percent of those who used the voucher, reported that their children gained admission to a preferred private school (Table 4). By comparison, little more than half the families in the public-school control group also said their children went to a desired school. The definition of "preferred" may have varied among parents, but there is no reason to think that treatment parents systematically used a different standard than did control parents.

To obtain more systematic information, all those offered scholarships who did *not* gain admission to the school of their choice were asked to indicate the main reason why. The most frequently mentioned reason given by parents for not gaining admission to a preferred school was the remaining cost of private education, a response given by almost 13 percent of those offered vouchers. Less than 3 percent of the parents who were offered vouchers listed "no space

available" at the school as the reason why they failed to gain admission to a preferred school. Surprisingly, parents who were not offered a voucher were more than twice as likely as those offered a voucher to list space constraints as the main factor that excluded their child from a preferred school. The remaining reasons for not gaining access to a preferred school were each mentioned by less than 2 percent of parents. In order of frequency, they were: transportation problems, no reason given, school location, a residential move, admissions test, applied too late, and communication problems. None of the parents who were offered vouchers said that they were denied access to a preferred school because their family was not a member of the affiliated church.

School Facilities

Comparisons in the expenditures of public and private schools are difficult to make, because reliable, systematic data on private-school expenditure is not readily available, and because public schools pay for services, such as transportation and school lunch, that may not be provided by private schools. The reader who seeks information about rough expenditure comparisons between the public and private schools attended by students in voucher studies can obtain it from previous evaluations of such programs.[20] For the purposes of this report, we merely advise the reader that only a handful of WSF scholarship students attend the elite private prep schools in D.C., such as Sidwell Friends and St. Albans. The overwhelming majority of them attend private religious schools that charge about $3,000 in annual tuition and spend only somewhat more than that per pupil by drawing upon charitable donations. The annual per-pupil expenditure for the D.C. Public School system, by contrast, is approximately $9,000. However, that figure includes funding for some special programs, such as special education, and services, such as transportation, that the private sector is not obligated to provide.

Given these differences in expenditure levels, one would expect to find more extensive facilities and smaller classes in Washington public schools. Reports from parents are only partially consistent with this expectation. Smaller classes require more teachers relative to the number of pupils, and the number of teachers in a school is a significant determinant of school costs.[21] It is, therefore, surprising that public schools were said to have larger classes. Parents claimed that the public schools attended by their children, on average, had 23 students in their classrooms, nearly six more than those in the private schools in the sample (Table 5). Based on parental reports, the private schools attended by students in the program are much smaller, averaging 182 students, than the public schools, which average 434 students. In other words, the impact of attending a private school was to reduce the number of schoolmates by 252 students or by 58 percent.

Additional findings from the parental survey displayed in Table 5 suggest that the facilities and programs were more extensive in public schools than in private schools of the District of Columbia. Parents of students in public schools were much more likely to report that their school had special programs for non-English speakers. They were also considerably more likely to say the school had a nurse's office, prepared lunches, and a cafeteria. For each of these items, the differences were large—36 percentage points or more. Public-school parents were also somewhat more likely to say their school had special programs for advanced learners, an arts program, a special education program, a computer lab, and a gym. There were no significant differences in the responses of private and public-school parents with respect to the presence of the following facilities and programs: child counselors, a library, after-school programs, music programs, and individual tutors.

In sum, if parents are to be believed, the private-school students in this study are attending smaller schools with smaller class sizes that have less extensive facilities and fewer special programs compared with the public-school control group. A private-school parent's statement during a focus group session effectively captured this apparent difference in the allocation of resources at public versus private schools:

> **Parent**: I put my children in private school for certain reasons. With everything happening in their country, children shooting children, I put them at [a parochial school]. I have been satisfied. The class size is good. My son's class size is about sixteen, but they don't have a lot of computers. They are well disciplined really…So the school has been good so far, I don't have any problems except for the computers. They don't have a lot of that.[22]

The survey data back up the claims of this parent. Although the private schools apparently have less elaborate physical plants and programs, the parents of private-school students are just as satisfied with the features of the schools that their children attend as are the parents of the public-school students.

Ethnic Composition of School

The implications of expanding school choice for the level of racial integration in education have been a matter of considerable debate. Critics argue that school choice will lead to ethnic and racial segregation and the balkanization of society,[23] while some research suggests that the private sector is more integrated than the public sector and that race relations in private schools are more positive.[24]

As can be seen in Table 6, parental reports on the ethnic and racial composition of their schools were inconsistent. By one measure, the voucher program has not led to increased racial and ethnic separation; by another measure, it has. Parents were asked, "What percent of the students in this child's classroom are minority?" In response to this question, they were given the option of saying, "less than 50 percent", "50-75 percent", "more than 75 percent but not all",

and "100 percent." On this item, attending a private school had no significant effect on the percentage of minority students in the classroom. However, parents were also asked, "What percent of students in the class were of the same race" as your child? Responses to this question indicate that the program did increase racial separation. Twenty-eight percent more of the students in private schools attended racially homogenous classrooms than did students in public schools. Similar percentages of private (24) and public (21) parents claimed that "racial conflict is a serious problem" at their child's school. The students in the study who are in private school report that they eat with and befriend students of other races about as much as the students who are in public school. Given the inconsistency in the responses to these five questions, no strong conclusions can or should be drawn about the effect of vouchers on racial and ethnic segregation in Washington at this point in the evaluation.

Special Education

In the debate over school choice, special education has received a good deal of attention. Critics of school choice say that private schools ignore the needs of students with physical and mental disabilities. For example, Laura Rothstein says that "choice programs often operate in a way that is either directly or indirectly exclusionary" of those with disabilities.[25] Defenders of school choice often claim that many of those diagnosed as disabled can learn in regular classrooms and that special arrangements can be made for others.

To illuminate this question, parents were asked if their child had learning disabilities, difficulty understanding English, or physical disabilities. There was no statistically significant difference in the number of learning disabilities, physical disabilities, or English language problems reported by the private and public-school parents. These findings presented in Table 7

suggest that children with special needs seek out and have access to private schools on a par with children who do not face such challenges.

Parents of students with learning disabilities were asked how well the school addressed their child's needs. As can be seen in Table 7, there are no statistically significant differences between the evaluations of private and public-school parents of special needs students on that measure (columns 4-6). The parents of non-English speaking students who *were offered* a scholarship (columns 1-3) were more than 40 percent more likely to say that their child's school is doing well meeting their child's special need. Even that apparently large effect is statistically significant only at the lower confidence level of $p < .10$ because only a small percentage of families who applied for scholarships had such special needs. As such, these results are hardly definitive. Still, private schools seem as well or perhaps even better equipped to meet the needs of some students facing special educational challenges as are public schools.

A parent who declined the scholarship discussed the ordeal that her special-needs child has endured in the public-school system in D.C. It is worth quoting her description at length:

Parent 1: Now at my son's [D.C. magnet school], they know that [he] has a problem reading. I have been fighting with them to get him into some kind of program where they can key in on his reading skills and the math is not a problem. It is the reading so they tell me, 'Well, maybe you ought to put him on some medicine.' They tell me that half the kids are on Ritalin. I say 'Why do I want my child on Ritalin?' And I went into the class one day and one girl looked like she wasn't even in the class. And I asked 'Is she ok?' and they said 'Oh she is on medicine.' Well why in the world do I want my child spaced out? ...I want him to be able to be in a setting where he can function not where he is just pushed to the side. So now they tell me that he may stay back. So it is a shame I have to get a lawyer to get them to do their job to get him placed where they can have him placed.[26]

Another public-school parent, from the control group, described how a D.C. public charter school had been much more responsive to her child's special needs:

Parent 2: One of the better reasons why I sent them [to a charter school] was because, let's say my daughter is slower in math, they don't put her back a grade, what they do

is let her take math with another class so she can move up. And that's what their goal is. To get all children at their appropriate grade level before they pass them on. But they don't hold them back as long as they're in that school. They never keep a child back because they have the different classrooms.[27]

In these two cases, we see how one parent used public-school choice to place her special-needs child in an appropriate environment; whereas, the other parent felt forced to use a more adversarial route to have her child's learning disability addressed effectively.

School Climate

Quantitative data from the second year of the WSF evaluation revealed only a few differences between private and public schools regarding the school climate variables that we measured. Nearly 50 percent of the parents with students in the public-school control group thought fighting was a serious problem at their children's school, as compared to just 26 percent of the private-school parents (Table 8). Nearly all of the parents of students in private school reported that school uniforms were required, as compared to about two-thirds of the parents in the control group. In contrast, hall passes are required more frequently in public than in private schools.

Based on our focus group discussions, the difference between the public and private schools regarding the problem of fighting can be enough to persuade even a strong supporter of public schooling to move her child to a private school:

Moderator: She was hurt in school?

Parent: Yes, in the school and that made me really determined to get her out at the end of the year, and I didn't live across the street from the school that would be in my area, and I really resented having to make this choice because I believe in public education, but it's not there, and I really wanted to stay because I don't want to feel like I'm abandoning the D.C. public school, but I think they've abandoned us.[28]

Homework

Parents were also asked about the amount and difficulty of homework assignments. As can be seen in Table 9, parents of private-school students said their children spent just 12 minutes more on homework per day than parents of public-school students reported. The students in private schools themselves also said they had more homework. Private-school students claimed they had about 24 more minutes of homework per day, a difference that was roughly consistent between the younger (grades 4-6) and older (grades 7-9) cohorts of students.

The greater amount and difficulty of homework assignments in private schools was a common theme in focus group discussions with parents. The following exchange, during a discussion with parents who had used the voucher to switch to private schools, was surprisingly typical. When asked what differences she had observed since switching her child to private school, one parent responded:

Parent: …I noticed that even when she had homework through the week, when they go on break or vacation, they get a pile of homework to bring home. So they're constantly keeping their minds open.[29]

The private-school students were significantly less likely to report that they would read better with more help, as only 23 percent of them made such an assertion as compared to 45 percent of the students in the public-school control group. Again, the effect was generally consistent across the younger and older cohorts of students. The private and public-school students did not differ significantly in their opinions about whether or not "class work was hard to learn" or they "had trouble keeping up with the homework" (Table 9).

In sum, both parents and students in private schools report more homework. The perceived differences between public and private schools are larger in reports from students than in the parental reports, although the difference has made a strong impression on a number of

parents who are participating in the study. Private-school students are much less likely to claim that they would benefit from more help in reading.

School-Parent Communications

Reports on school-parent communications were quite consistent, as private-school parents claimed to have more extensive contact, in a variety of ways, with their child's school (Table 10). Although public and private-school parents reported similar rates of speaking to classes, and attendance at parent/teacher conferences and parental open houses--and public-school parents were much more likely to report being PTA members--a higher percentage of parents of students in private schools reported:

- that they receive notes about their child from the teacher — 98 percent for private-school parents, compared to 76 percent for the control group;
- that they are informed of their child's progress midterm — 96 vs. 75 percent;
- that parents participate in instruction — 77 vs. 57 percent;
- that parents receive a newsletter about what is going on in school — 90 vs. 70 percent;
- that they are notified when their child is sent to the office the first time for disruptive behavior — 93 vs. 80 percent.

Our focus group discussions with parents powerfully reinforced these statistical findings regarding school-parent communication. The greater amounts of communication as well as the effectiveness of that communication in the private sector were the most commonly cited differences between public and private schools that emerged from our in-depth discussions with parents. More than a dozen exchanges were similar to this one:

Parent: The difference, public schools, you don't know there is a problem with the child until you get to a PTA meeting. And they say, well, the child has been doing this and that and the other. Well, if he has been a problem and this is indicative of his behavior why the heck haven't I been notified prior to now? With the [private] school that my kids are in now, they send a letter home every single day that they have been disruptive or haven't finished their homework, or something, there is a note that goes home and you have to sign it and send it back. So communication is good there and they'll call you as soon as the incident happens instead of sending them home or suspending them...they weigh both sides and then decide what [the] disciplinary action will be.[30]

These findings regarding differences in communication cannot be attributed to initial parental characteristics. Recall that the two groups of parents, separated only by the selections of a lottery, were similar in all relevant respects at baseline. Major differences in school-parent communications, therefore, appear to be due to the different relationship between home and school nurtured by private schools.

Parental Involvement in Child's Education

Supporters of school choice claim that when parents choose a school, the family becomes more engaged in their child's education. Working together, schools and parents create a more effective educational environment for their children.[31] But choice critics argue that any observed differences in parental engagement with private schools is due to the selected nature of the families who choose private schools in the first place.

The results after two years provide some evidence that the WSF program increased family engagement in their children's education. Nearly 88 percent of private-school parents said that they frequently talked with their child about his or her experiences at school, compared with 64 percent of parents in the control group (Table 11). Fifty-eight percent of private-school parents reported regularly helping their child with math or reading projects outside of their homework, compared with just 37 percent of public-school parents. The responses of private and public- school parents were similar to each other regarding the frequencies with which they helped their child with homework, worked on a school project, or attended school activities with their child.

Religious Considerations

The evidence is mixed, after two years, regarding the extent to which the WSF program affected the religious practices of parents and students. Private-school parents were somewhat

less likely than public-school parents to report that they attend religious services at least weekly (51 percent versus 69 percent). However, 34 percent of private-school parents, as compared with just nine percent of public-school parents, said that they were "very satisfied with the extent to which students can observe religious traditions in school."

After two years, the WSF program had no clear effect on the religious practices of students. There were no statistically significant differences in the reports of private and public-school students regarding whether they participated in various religious activities "a lot" during the previous year.

Parental Satisfaction

Most studies of school choice have found that low-income parents who use vouchers to send their children to private schools are more satisfied with various aspects of the private school than are parents who send their children to public school. Studies of school choice programs in Milwaukee, San Antonio, Indianapolis, and Cleveland all reach essentially this same conclusion.[32]

To gather quantitative data on this question, parents were asked about their satisfaction with the school their child attended. As can be seen in Table 13, the differences between the two groups of parents are quite dramatic. Private-school parents are more enthusiastic about their schools than the public-school parents who applied for a school voucher. Nearly 81 percent of the private-school parents gave their school a grade of "A" or "B," as compared to 60 percent of the public-school parents. None of the private-school parents graded their child's school "D" or "F," although 11 percent of the control group parents considered their child's school deserving of such low grades.

Parents were also asked about specific dimensions of school life. On most dimensions about which parents were questioned, private-school parents were significantly more satisfied with their child's education. When asked about the amount of information that parents received from teachers, half of all private-school parents were "very satisfied," compared with less than one-fifth of public-school parents. With respect to the free exercise of religion, 34 percent of private-school parents were very satisfied but just nine percent of the control group were very satisfied. For class size, 35 percent of private-school parents claimed to be very satisfied, as compared to 12 percent of public-school parents. Regarding school safety, 43 percent of the Washington private-school parents said they were very satisfied, while just 21 percent of the parents of students still in public school gave this response. As Table 13 shows, similar but slightly smaller differences emerged when parents were asked about the students' respect for teachers, the teaching of moral values, the subjects taught in school, the quality of teaching, the clarity of school goals, and the amount of teamwork among school staff.

The enhanced satisfaction among private-school parents with various aspects of their new schools was apparent also in their comments in focus-group sessions. One parent, who enrolled her child in a Catholic school even though she did not win a scholarship, explained her decision this way:

Parent 1: But as far as her school and stuff is concerned, I have no problem…outside of the fact that they are parochial school and they don't have enough money. But, hey, the academics is fine. Her teachers are great. Her teachers stay on her...whenever anything goes wrong, I find out, her grandmother finds out, or her father finds out.[33]

A second parent, who won a scholarship, spoke of the enduring attraction of the "Catholic schools" model of education:

Parent 2: I guess I went through Catholic school my whole life. My whole family did. The classrooms are very small. Where they attend they have a lot of activities. The

> main focus is education along with the Catholic religion. The school is small. It is very safe. The teachers actually care…The tuition is hard but I figure I want my children to have that good education cause public school just didn't offer them what I expected them to give them. It is not that many activities [compared] with the Catholic schools. [The Catholic schools] have music. They take computers every day. They have Spanish classes everyday. Like I said the teachers actually care. They work with them kind of on a one-on-one basis. The principal, he is excellent. There is not many field trips but when they have them they are educational. They don't just go to the zoo or to the park. They go to a lot of museums...[34]

The private-school parents seem to appreciate that the schools their children are now attending, predominantly Catholic parochial schools, are attentive to them and their children, even in the face of severe resource constraints. Whether it is because private schools target their limited resources more effectively or are able to foster a stronger sense of community, it is unequivocal that the modest-income D.C. parents in our study are much more satisfied with what private schools have to offer their children than the public school alternative.

Student Adjustment to and Satisfaction with Choice Schools

Adjusting to a new private school can be very difficult, especially for older children. The fact that the older cohort of students experienced adjustment problems when they switched to private school was confirmed by student questionnaire and test score performances in the first year.[35] The responses to the student questionnaire in the second year provide an opportunity to gauge the extent to which older voucher students either persisted in or overcame their adjustment problems during the second year in their new schools. Responses by students in grades seven through nine to the second year survey suggest that their adjustment problems continued in some areas but appear to be less severe than they were during the first year.

Perhaps the single most revealing question in the survey asked the students to grade their school from A to F (Table 14). Younger students in private school were somewhat more likely to give their school an "A" than were those in the control group—68 percent as compared to 45

percent, although the difference was not quite statistically significant. But the older students in private school were less likely to give their school an "A." Only 7 percent of them did so, as compared to 25 percent of the control group, again, a difference that is not quite statistically significant. The difference between the more favorable evaluations of the younger students in private school and the less favorable evaluations of the older students is, itself, statistically significant. Even after two years in their new schools, students who switch to private schools when they were younger tended to evaluate their new schools more favorably than did students who made the change when they were older.

The results were similar, although less conclusive, when students were asked how they felt about going to school. Among the younger students, 64 percent of the private-school students but only 38 percent of the public-school students said they "like it a lot." Among the older students, the difference in the responses to this question by private and public-school students were statistically indistinguishable from each other. Overall, the data show a private-school gain of 21 percent in the likelihood that a student enjoys going to school.

Still another question evoked a similar divide in responses between the cohorts. When asked whether "rules for behavior at [their] school are strict," all of the older students attending private schools agreed, compared with 56 percent of the older students in the control group. In contrast, about 70 percent of the younger students in both the private and public-school groups agreed that rules in their schools were strict. In this case, it was the strong voucher effect among the older cohort that drove the combined private-school effect of a 19 percentage point increase in the level of agreement that rules are strict in their school.

Finally, Table 14 ends with a set of results that indicates that the older students might be making gains in adjusting to their new schools. Students were asked if "teachers are interested in

students" at their school. Virtually all of the older students in private school answered "yes" to that question, compared with 76 percent of the older students in the control group. Although that difference itself was not statistically significant, the voucher effect on this measure for the older private-school students is significantly different from the pattern evidenced by the younger private-school students.

In sum, it appears that the students who switched from public to private school when they were older are making progress in adjusting to their new schools, but still have a ways to go. They are more convinced than the younger students that their private-school teachers are interested in students; however, they are much stingier than the younger students in assigning an "A" grade to their new schools. Although the cross-group differences are not quite statistically significant, it appears that the older private-school students evidence less of a gain than the younger students in their enthusiasm for attending school, and more of a gain in their view that rules are strict in their new schools.

Consistent Attendance at School

All else equal, it is generally thought that students do better the longer they remain in the same school. Does school choice destabilize a child's educational experience? In his evaluation of the Milwaukee school choice program, John Witte expressed concern about the high rate of attrition from private schools.[36] Many choice critics also raise questions about the readiness of private schools to expel students who do not "fit in." But other studies have found that voucher students from low-income families are more likely to remain in the same school throughout the school year and from one year to the next.[37]

The WSF program provides an opportunity to examine this question with data from a randomized experiment. The relevant results are presented in Table 15. A very high percentage

of all students in the study claimed to have remained in the same school the entire year. More than 90 percent of both the private and public-school parents reported that their child had remained in the same school throughout the school year. This percentage is much higher than is typical of inner-city minority children in general, perhaps indicating that the families who applied for scholarships were strongly committed to their children's education.

Although there were no apparent differences between the two groups in terms of mobility rates, private-school parents were significantly more likely to report that their child had been suspended during the previous academic year. Seventeen percent of private-school parents reported a suspension, as compared with just six percent in the control group. The parents of students in private schools also reported that their child was absent from school and more than a half hour late for school in the previous month more frequently than public-school students.

These modestly elevated rates of tardiness and absenteeism among private-school students do not appear to have been due to the fact that their schools were less conveniently located, as students attending private schools did not, on average, face a longer daily commute to school than their public-school counterparts. The lack of a significant difference in the length of students' commute, however, may obscure other important differences. For example, it seems likely that private-school students are primarily driven to school by their parents, rather than relying on buses provided by their school. The lack of information concerning the modes of transportation used by the two groups of students makes such an interpretation speculative. What does seem clear, however, is that the majority of families using WSF scholarships chose to send their child to a private school relatively close to their home. While expanding school choice would obviously loosen the tie between residential location and school, it would not sever it completely.

Students Changing Schools

Within the school year, the private-school students in the study appear to have been exposed to somewhat less time in school, due to increased rates of suspension, absenteeism, and tardiness. Have they experienced comparable disruptions in the stability of their school attendance across academic years? In other words, does the voucher intervention produce disruptions in a child's education because of school switching, either due to the choices of parents or school expulsions? Based on the second year results from Washington, the answer appears to be "no." There is no significant difference in the proportion of private and public-school students who plan to continue in their current school, as reported by parents (Table 16). For those parents who said that their child would attend a different school in the subsequent year, we asked them to describe the most important factor in the decision to switch schools. Private-school parents who planned to switch schools were somewhat more likely than the control group to list "quality of school unacceptable" and "child admitted to a preferred private school" as the primary reason for changing schools. These results suggest that private-school parents are somewhat more likely to use their choice opportunities to attempt to improve the quality of the educational product that their child is receiving. Less than one percent of the private-school parents said that their child was expelled from or asked not to return to a private school. That implicit expulsion rate for private-school students was not significantly different from the rate evidenced by the control group.

In sum, the results from the second year of the Washington voucher experiment indicate levels of educational stability that are similar between the private-school students and their public-school peers. Private-school students using vouchers are no more likely to change schools downstream than are comparable public-school students. When the private-school

students switch to a different school, parents are more likely to report that they are trying to "trade up" to a higher quality school than are parents of public-school students.

Student Tolerance and Involvement in Extracurricular Activities

The fostering of civic values such as political tolerance and community involvement have long been important components of the educational mission of schools.[38] A number of political and educational theorists have claimed that public schools are the optimal, if the not the only, environment for inculcating civic values in young people.[39] After all, public schools are, by definition, public. They are designed to be open to all students on an equal basis and are regulated by the state—the very entity that will profit most by the fostering of civic values in students.

Recently, a few scholars have challenged the orthodoxy that public schools necessarily are better at preparing students for citizenship. Examining the actual data from a number of different sources, they find that private schools perform surprisingly well, compared to public schools, in inculcating a number of important civic values.[40]

Our survey data allow us to examine the question of whether private schooling produces higher, lower, or equal levels of political tolerance and community involvement for young people. In the student questionnaire, we asked the students to think of a political group whose beliefs they strongly oppose. We then asked them a series of questions regarding which civil liberties they would extend to people who espouse such beliefs.[41] The results appear at the top of Table 17. For all three questions, the students in private school were more likely to provide tolerant responses. Thirty-four percent of the private-school students would permit members of a group that they oppose to give a speech in their community. Only 18 percent of the students in the control group would extend free-speech protections to such a group. Forty-seven percent of

the private-school students would permit members of a disliked political group to live in their neighborhood, a policy that only 27 percent of the public-school students would support. Finally, 37 percent of the private-school students would permit a candidate whose views they fiercely oppose to run for president; whereas, only 20 percent of the control group students would grant a candidate whose views they find distasteful the opportunity to test the national political waters. The private-schooling advantage in fostering political tolerance that is evident here cannot be dismissed as a product of differing family backgrounds, as the randomization process effectively neutralized such self-selection influences. Modest-income inner-city students who switched to private schools in D.C. displayed significantly higher levels of political tolerance than their public-school peers after two years.

The evidence regarding community and extracurricular involvement is somewhat less striking than the results on political tolerance. The students in private schools were much more likely to respond that they frequently participated in "sports, exercise or gymnastics" and "art, music or dance lessons" in the past year than were the students in the control group. The difference between the private and public-school students was most pronounced for the participation of the older students in exercise activities, as 69 percent of the older private-school students reported they had done so "a lot" but only 14 percent of their public-school peers responded similarly. Overall, there were no significant differences in the reported involvement of private and public-school students in team sports or scouting; however, the younger cohort of private-school students were less likely than the younger public-school students to respond that they participated in scouting.

Academic Achievement

Until recently, studies of voucher programs have not randomly assigned students to treatment and control conditions, and therefore have not overcome the possible selection problems that we have discussed repeatedly in this paper. Privately funded programs in Indianapolis, San Antonio, and Milwaukee admitted students on a first-come, first-served basis. And in the state-funded program in Cleveland, though scholarship winners were initially selected by means of a lottery, eventually all applicants were offered a scholarship, thereby precluding the conduct of a randomized experiment. The public Milwaukee program did award vouchers by a lottery, but data collection was incomplete.[42] Therefore, uncertainty has persisted regarding the crucial question of whether or not school vouchers actually improve the educational achievement of the students who use them.

Last year, a team of researchers (including two of the authors of this evaluation) released a report that examined the test score effects of the New York City, Dayton, Ohio and Washington, D.C. school voucher experiments after two years.[43] The evaluations in all three cities were designed as randomized field trials, permitting us to ascribe any significant test-score differences between the treatment and control group to the effects of the voucher. We found that in each of the three cities, after two years, the African American students who switched to private schools demonstrated statistically significant gains in combined reading and math test scores relative to their respective control groups. No significant test-score differences were identified for the groups of Hispanic students in New York (51 percent of that city's sample), white students in Dayton (24 percent of that city's sample) or non-African American students in Washington (6 percent of that city's sample). Here we reproduce the test-score results after two years in Washington.

To estimate more precisely the effects of attending a D.C. private school on student test scores, baseline test scores in both reading and math were included in all equations. The test-score analysis was restricted to African American students because the voucher experiments to date have uncovered a consistent pattern of effects for African Americans but not necessarily students of other ethnicities. Such a restriction hardly limits our analysis here, since over 93 percent of the participants in the second year of the D.C. evaluation were African American.

The Year One test-score results in D.C. had varied depending on the subject matter of the test and the grade cohort of the students. The younger cohort of private-school students had outperformed their public-school peers in math but not in reading. The older cohort of private-school students had under-performed relative to their control group in reading but not in math. The mixed test score results from the first year, coupled with student survey responses that differed greatly by grade cohort, provided evidence that the younger students were adjusting better to their new private schools than were the older students who had made the switch.[44]

Table 18 displays the results of the Year Two test-score analysis for African Americans, overall and broken down by type of test and grade cohort. As such, it allows us to assess the extent to which the African American students in private schools demonstrate significant achievement effects from the voucher intervention and the extent to which any effects vary by subject matter or grade cohort. The results are remarkably clear and consistent. Overall, the effect of the voucher intervention on the combined reading and math achievement of the African American students was 9 National Percentile Rank (NPR) points. The gain of these students relative to the control group was nearly 10 NPR points in math and 8 NPR points in reading, effects that are each statistically significant and are not significantly different from each other.

The test score effects for the younger cohort of students were indistinguishable from the effects for the older cohort.

Concerned that these results might be merely the product of a different sample of students returning for the first and second year evaluations, we re-ran the analysis on a consistent set of respondents. Our stable-sample reanalysis confirmed both the varied voucher effects of the first year and the consistently positive voucher effects of the second year in D.C. Examining the same group of students over time, the younger cohort of voucher students performed better than their public-school peers in math after one year and better in math, reading, and combined achievement after two years. The older cohort of voucher students performed worse than the control group in reading after one year but better in math and combined achievement after two years.

Conclusions

It is too soon to ascertain the long-term impact of the voucher program sponsored by the Washington Scholarship Fund. Initial results, however, indicate that several characteristics of the private and public schools in our study are different in potentially important ways. The parents of students in private schools in our sample are much more satisfied with their children's schools. Home-school communications are more extensive in the private sector, and students are expected to do more homework. The students who switched to private schools demonstrate higher levels of political tolerance as compared with students in the control group. Two years after changing schools, African American students attending private schools outperformed their peers in combined reading and math achievement by 9 percentile points, a statistically significant difference. Evidence from the surveys and test scores suggest that the adjustment problems experienced by the older cohort of voucher students during the first year in their private schools

were real but have attenuated markedly. Based on a number of important outcome measures, both younger and older cohorts of African American voucher students appear to be doing better than are their public-school peers.

It is still premature to draw strong conclusions from these findings. The results do suggest that vouchers for low-income families are largely effective in accomplishing their goal of raising the educational achievement levels of low-income African American students and producing higher levels of parental and student satisfaction and political tolerance. However, no program evaluation is perfect, and the modest response rates to our follow-up data collection sessions and the possibility that differential response bias may exist lead us to be cautious in the claims that we are making here. Two years is a short time for evaluating an educational intervention such as a school voucher experiment. Currently, we are preparing to analyze the third and final year of data from the Washington voucher experiment, and to further explore ways to identify and adjust for differential response between the treatment and control group. We are anxious to discover if the positive voucher impacts that we have discovered thus far increase, plateau, attenuate, or disappear upon further analysis, three years into the program. For now, our experimental evaluation of the effects of the Washington Scholarship Fund privately funded school voucher program is generally positive but still a work in progress.

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[3] Disparate findings have emerged from these studies. For example, one analysis of the Milwaukee choice experiment found test scores gains in reading and math, particularly after students had been enrolled for three or more years, while another study found gains only in math, and a third found gains in neither subject. Jay P. Greene, Paul E. Peterson, and Jiangtao Du, "School Choice in Milwaukee: A Randomized Experiment," in Paul E. Peterson and Bryan C. Hassel, eds., *Learning from School Choice* (Washington, D.C.: Brookings, 1998), pp.335-56; Cecilia Rouse, "Private School Vouchers and Student Achievement: An Evaluation of the Milwaukee Parental Choice Program," *Quarterly Journal of Economics*, 113, (1998), pp. 555-602; John F. Witte, "Achievement Effects of the Milwaukee Voucher Program," paper presented at the 1997 annual meeting of the American Economics Association. On the Cleveland program, see Jay P. Greene, William G. Howell, and Paul E. Peterson, "Lessons from the Cleveland Scholarship Program," in Peterson and Hassel, eds., *Learning from School Choice*, pp. 357-92; Kim K. Metcalf, William J. Boone, Frances K. Stage, Todd L. Chilton, Patty Muller, and Polly Tait, "A Comparative Evaluation of the Cleveland Scholarship and Tutoring Grant Program: Year One: 1996-97," School of Education, Smith Research Center, Indiana University, March 1998.

[4] For first year results from Washington see Patrick J. Wolf, William G. Howell, and Paul E. Peterson, "School Choice in Washington, D.C.: An Evaluation After One Year," Program on Education Policy and Governance, Harvard University, February 2000. Results in Dayton after one year are reported in William G.Howell and Paul E. Peterson, "School Choice in Dayton, Ohio: An Evaluation After One Year," Program on Education Policy and Governance, Harvard University, February 2000. Both these papers, as well as all other PEPG reports cited below, are available at www.ksg.harvard.edu/pepg . First year results from New York City are reported in Paul E. Peterson, David E. Myers, William G. Howell, and Daniel P. Mayer, "The Effects of School Choice in New York City," in Susan B. Mayer and Paul E. Peterson, *Earning and Learning: How Schools Matter* (Washington, D.C.: Brookings, 1999), Ch. 12.

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[5] The assessment used in this study is Form M of the Iowa Tests of Basic Skills, Copyright 1996 by The University of Iowa, published by The Riverside Publishing Company, 425 Spring Lake Drive, Itasca, Illinois 60143-2079. All rights reserved.

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[6] Demographic differences between treatment and control groups are reported in the appendix to Paul E. Peterson, Jay P. Greene, William G. Howell, and William McCready, "Initial Findings from an Evaluation of School Choice Programs in Washington, D.C. and Dayton, Ohio," Occasional Paper, Program on Education Policy and Governance, Kennedy School of Government, Harvard University, October, 1998.

[7] Wolf, Howell, and Peterson, "School Choice in Washington, D.C."

[8] For details about this procedure, see the Appendix in Wolf, Howell, and Peterson, "School Choice in Washington, D.C."

[9] This possibility was suggested to us by economist Derek Neal of the University of Wisconsin.

[10] To compute the program's impact on those who used a scholarship to attend a private school, we used an instrumental variables estimator. This procedure is discussed in Joshua D. Angrist, Guido W. Imbens, and Donald B. Rubin. "Identification of Causal Effects using Instrumental Variables," *Journal of the American Statistical Association*, 91 (1996), pp. 444-462.

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[12] Sandra Feldman, "Let's Tell the Truth," *New York Times*, November 2, 1997, p. 7 (Advertisement).

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[15] Carnegie Foundation for the Advancement of Teaching, *School Choice: A Special Report* (Princeton, New Jersey: Carnegie Foundation for the Advancement of Teaching, 1992), p. 13.

[16] Carol Ascher, Norm Fruchter, and Robert Berne, *Hard Lessons: Public Schools and Privatization* (New York: Twentieth Century Fund Press, 1996), pp. 40-41.

[17] Terry M. Moe, *Schools, Vouchers, and the American Public* (Washington D.C.: Brookings, 2001).

[18] D.C. Taker Focus Group, March 4, 2000, First Session.

[19] Bruce Fuller, *School Choice* (Berkeley, CA: Policy Analysis for California Education, University of California, Berkeley and Stanford University, 1999).

[20] For New York, see Myers, Peterson, Mayer, Chou, and Howell, "School Choice in New York City After Two Years: An Evaluation of the School Choice Scholarships Program." For Washington, see the Wolf, Howell, and Peterson, "School Choice in Washington, D.C."

[21] Though a National Center for Education Statistics study has established that private schools pay teachers an average of 25% less than the public school average. This salary gap might allow private schools to maintain smaller classrooms for the same teacher salary totals that public schools expend, though it also may prevent them from landing and keeping the best teachers. Valerie Strauss, "Crossing the Education Divide," *Washington Post*, July 24, 2001, p. A11.

[22] D.C. Taker Focus Group, April 8, 2000, Second Session.

[23] Michael Kelly, "Dangerous Minds," *The New Republic*, December 30, 1996; Amy Gutmann, *Democratic Education* (Princeton, NJ: Princeton University Press, 1997); Karl E. Taeuber and David R. James, "Racial Segregation among Public and Private Schools," *Sociology of Education* 55 (1982), pp. 103-22.

[24] Jay P. Greene, "Civic Values in Public and Private Schools," in Peterson and Hassel, eds., *Learning from School Choice*, pp. 83-106. For a discussion of the issue, see Gary Rosen, "Are School Vouchers Un-American?" *Commentary*, 109:2 (2000), pp. 26-31.

[25] Laura F. Rothstein, "School Choice and Students with Disabilities," in Stephen D. Sugarman and Frank R. Kemerer, eds., *School Choice and Social Controversy*, (Washington, D.C.: Brookings Institution Press, 1999) p. 357.

[26] D.C. Decliner Focus Group April 8, 2000, First Session.

[27] D.C. Control Focus Group, March 25, 2000, Second Session.

[28] D.C. Taker Focus Group, March 4, 2000, First Session.

[29] D.C. Taker Focus Group, March 4, 2000, First Session.

[30] D.C. Taker Focus Group, April 8, 2000, Second Session.

[31] John E. Brandl, *Money and Good Intentions Are Not Enough* (Washington, D.C.: Brookings Institution Press,

1998).

[32] These results are summarized in Paul E. Peterson, "School Choice: A Report Card," in Peterson and Hassel, eds., *Learning from School Choice*, pp. 17-19.

[33] D.C. Control Focus Group, March 25, 2000, Second Session.

[34] D.C. Decliner Focus Group April 15, 2000 First Session.

[35] Wolf, Howell, and Peterson, "School Choice in Washington, D.C."

[36] John F. Witte, "First Year Report: Milwaukee Parental Choice Program," University of Wisconsin, Madison, Department of Political Science and Robert M. Lafayette Institute of Public Affairs, November 1991.

[37] Jay P. Greene, William G. Howell, and Paul E. Peterson, "Lessons from the Cleveland Scholarship Program," in Peterson and Hassel, eds., *Learning from School Choice*, pp. 376-80.

[38] See Horace Mann, *The Republic and the School*, edited by Lawrence A. Cremin (New York: Teachers College Press, 1957); and John Dewey, *Democracy and Education* (New York: Macmillan, 1963).

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[40] Patrick J. Wolf, Jay P. Greene, Brett Kleitz, and Kristina Thalhammer, "Political Tolerance and Private Schooling," in Paul E. Peterson and David A. Campbell, eds., *Vouchers, Charters and Public Schooling* (Washington: Brookings, forthcoming 2001); Jay P. Greene, Joseph Giammo, and Nicole Mellow, "The Effect of Private Education on Political Participation, Social Capital, and Tolerance: An Examination of the Latino National Political Survey," *Georgetown Public Policy Review* 5, 1999.

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[44] Wolf, Howell, and Peterson, "School Choice in Washington, D.C."

Table 1 – Educational Characteristics: Scholarship Takers and Decliners, Washington DC

	Takers	Decliners	Difference
	(1)	(2)	(3)
Baseline Test Scores:			
Reading			
Grades 3-6	30.6	30.9	-0.3
Grades 7-9	35.5	24.8	**10.7*** **
Math			
Grades 3-6	25.1	21.1	4.0
Grades 7-9	29.7	19.8	9.9***
(N)			224-297
Percent of children facing the following educational challenges:[1]			
Learning disability	7.8	14.3	-6.5**
Primary language not English	6.5	3.1	3.4
Physical disability	4.4	3.1	1.3
(N)			392-399

Figures may not sum due to rounding. Percentages are weighted; N is the actual number of observations reported for parents with children in grades 1-7 at the time of baseline testing in 1998. The grades ranges for the two cohorts reflect their projected grades, given annual advancement, and may not match their actual grade in 2000 for all cases. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed test conducted. Differences in bold indicate effects that are significantly different between the two grade cohorts at least at $p < .1$ based on a T-Test.

[1] As reported by parents in 2000 survey.

Table 2 -- Demographic Characteristics: Scholarship Takers and Decliners, Washington DC

	Takers	Decliners	Difference
	(1)	(2)	(3)
Family Income:			
Less than $5,000	7.6	11.4	-3.8
$5,000-$10,999	14.6	23.7	-9.1**
$11,000-$24,999	40.4	45.6	5.2
$25,000-$39,999	23.9	19.5	4.4
$40,000 or more	5.9	3.4	2.3
Total	100.0	100.0	
Average family income	$20,466	$18,072	$2,394**
Families receiving following forms of government assistance:			
Food Stamps	21.7	39.5	-17.8***
TANF (Welfare)	15.8	27.8	-12.0***
HUD Housing Vouchers	8.8	18.2	-9.4***
Supplemental Security Income	3.9	12.3	-8.4***
Social Security	11.2	15.3	-4.1
Mother's Education (highest achieved)			
No high school diploma	3.2	8.7	-5.5**
High school diploma or GED	36.3	32.8	3.5
Less than 2 yrs post secondary	24.6	34.9	-10.3**
2+ yrs of trade, vocational or bus. school	7.7	7.9	-0.2
2 yrs or more college	16.6	10.0	6.6*
College graduate (4 or 5 yr program)	10.0	3.8	6.2**
Graduate degree	1.6	1.8	-0.2
Total	100.0	100.0	
Average Number of Years of Education	13.2	12.8	0.4***
Mother's Employment Status			
Full time	68.1	64.4	3.7
Part time	10.3	13.3	-3.0
Looking for work	16.6	18.4	-1.8
Not looking	5.0	3.8	1.2
Total	100.0	100.0	

Table 2 Continued

	Takers	Decliners	Difference
	(1)	(2)	(3)
Percent of families who moved within the past 2 years	16.9	30.0	-13.1***
Mother's Ethnicity			
African American	89.3	96.9	-7.6***
White	0.4	0.0	0.4
Hispanic	6.1	1.2	4.9***
Other	4.2	1.9	2.3
Total	100.0	100.0	
Mother's Religious Affiliation			
Baptist	54.0	64.5	-10.5**
Other Protestant	12.6	9.8	2.8
Catholic	17.1	11.3	5.8*
Other Religion	11.4	9.3	2.1
No Religion	4.9	5.1	-0.2
Total	100.0	100.0	
Mother Currently Married	17.4	16.1	1.3
Percentage of Mothers US Born	93.7	94.9	-1.2
Percentage of mothers who voted in last presidential election	88.9	76.7	12.2***
Percentage of students with a household member in jail during past year	4.7	2.1	2.6
(N)			292-402

Figures may not sum due to rounding. Percentages are weighted; N is the actual number of observations reported for parents with children in grades 1-7 at baseline in 1998. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed test conducted. All figures are based on parental reports in the 2000 survey.

Table 3 – Reasons School Selected, Washington DC

	Effect of Scholarship Offer			Effect of Going Private		
	Offer	No Offer	Impact	Private	Public	Impact
	(1)	(2)	(3)	(4)	(5)	(6)
Cited as the most important reason why parent chose school:						
Academic quality	40.6	35.9	4.7	47.4	34.6	12.8
Only choice available	12.4	15.5	-3.1	7.9	16.4	-8.5
Special features of school	9.8	12.4	-2.6	6.0	13.1	-7.1
Convenient location	7.2	4.6	2.6	11.0	3.9	7.1
What is taught in school	6.6	7.6	-1.0	5.0	7.8	-2.8
Neighborhood public school	4.6	5.5	-0.9	3.2	5.7	-2.5
School safety	4.5	3.0	1.5	6.6	2.6	4.0
Religious instruction	3.8	2.9	0.9	5.2	2.7	2.5
Teacher quality	3.8	6.7	-2.9*	0.0	7.5	-7.8
Discipline	3.7	1.7	1.9	6.4	1.2	5.2
Class size	1.5	2.6	-1.1	0.0	2.9	-3.0
School facilities	0.9	0.3	0.6	1.9	0.1	1.8
Extra-curricular activities	0.6	1.2	-0.6	0.0	1.4	-1.6
Sports program	0.0	0.0	0.0	0.0	0.0	0.0
Child's friends	0.0	0.0	0.0	0.0	0.0	0.0
(N)			666			666

Figures may not sum due to rounding. Percentages are weighted; N is the actual number of observations for parents with children in grades 1-7 at baseline in 1998. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed tests conducted.

Table 4 – Attendance at Preferred School, Washington DC

	Effect of Scholarship Offer			Effect of Going Private		
	Offer	No Offer	Impact	Private	Public	Impact
	(1)	(2)	(3)	(4)	(5)	(6)
Percent gaining admission to a school the family wanted the child to attend:	74.7	57.4	17.3***	97.5	52.9	44.6***
Reasons why child did not gain admission to preferred school:[1]						
Could not afford tuition	12.5	26.1	-13.6***	0.0	29.6	-34.9***
No space available	2.5	5.2	-2.7*	0.0	5.9	-7.0*
Transportation problems	1.3	1.4	-0.1	1.3	1.5	-0.2
No reason given by school	1.1	0.9	0.2	1.3	0.8	0.5
School in inconvenient location	0.9	0.4	0.5	1.5	0.2	1.3
Moved away from the school	0.8	1.1	-0.3	0.3	1.2	-0.9
Child did not pass admissions test	0.8	1.0	-0.2	0.5	1.0	-0.5
Applied too late	0.2	0.4	-0.2	0.0	0.5	-0.5
Communication problems	0.2	0.3	-0.1	0.2	0.4	-0.2
Family not a member of church affiliated with school	0.0	0.0	0.0	0.0	0.0	0.0
Parent did not answer question	4.9	5.8	-0.9	3.8	6.0	-2.2
(N)			712			712

Figures may not sum due to rounding. Percentages are weighted; N is the actual number of observations for parents with children in grades 1-7 at baseline in 1998. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed tests conducted.

[1] Percentages are in terms of the total population who reported whether or not their child attended the family's preferred school.

Table 5 – School Facilities and Programs, Washington DC

	Effect of Scholarship Offer			Effect of Going Private		
	Offer	No Offer	Impact	Private	Public	Impact
	(1)	(2)	(3)	(4)	(5)	(6)
Average school size	302.2	408.5	-106.3***	181.9	434.3	-252.3***
Average class size	20.1	22.3	-2.2***	17.3	22.9	-5.6***
Percent of children who have the following resources at their school:						
Special programs for non-English speakers	42.0	68.9	-26.9***	6.0	76.3	-70.3***
Nurse's office	71.7	89.2	-17.5***	45.3	93.9	-48.6***
Prepared Lunches	61.3	77.1	-15.8***	41.6	81.1	-39.5***
Cafeteria	77.8	92.1	-14.3***	58.9	95.6	-36.7***
Special programs for advanced learners	55.9	66.4	-10.5**	39.7	69.4	-29.7**
Arts program	76.2	86.3	-10.1***	62.1	89.1	-27.0***
Special education programs	74.6	83.8	-9.2***	61.2	85.6	-24.4***
Computer lab	85.2	93.0	-7.8***	74.4	95.0	-20.6***
Gym	72.5	78.6	-6.1*	64.4	80.1	-15.7*
Child counselors	89.1	92.7	-3.6	84.3	93.6	-9.3
Library	92.3	95.2	-2.9	88.2	95.9	-7.7
After-school program	84.1	86.6	-2.5	80.8	87.2	-6.4
Music program	87.2	87.4	0.2	86.8	87.3	0.5
Individual tutors	58.1	59.7	1.6	63.5	59.3	4.2
Percent of parents "very satisfied" with the facilities in their child's school	19.1	15.7	3.4	23.6	14.8	8.8
(N)			465-703			464-703

Figures may not sum due to rounding. Percentages are weighted; N is the actual number of observations for parents with children in grades 1-7 at baseline in 1998. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed tests conducted.

Table 6 – Ethnic Considerations, Washington DC

	Effect of Scholarship Offer			Effect of Going Private		
	Offer	No Offer	Impact	Private	Public	Impact
	(1)	(2)	(3)	(4)	(5)	(6)
Percent of classmates that are minority:						
Less than 50 percent	20.3	25.4	-5.1	13.5	26.6	-13.1
50-75 percent	14.0	16.4	2.4	22.0	15.9	6.1
More than 75 percent but not all	23.4	25.5	-2.1	20.6	26.0	-5.4
100 percent	37.9	32.7	4.8	43.9	31.5	12.4
Total	100.0	100.0		100.0	100.0	
Percent of classmates that are the same race as student:						
Less than 50 percent	9.5	16.4	-6.9***	0.2	18.2	-18.0***
50-75 percent	19.3	21.0	-1.7	17.0	21.4	-4.4
More than 75 percent but not all	35.4	37.4	-2.0	32.7	37.9	-5.2
100 percent	35.8	25.2	10.6***	50.5	22.5	28.0***
Total	100.0	100.0		100.0	100.0	
Percent claiming that racial conflict is a serious problem at child's school	22.1	20.9	1.2	23.8	20.6	3.2
(N)			698-723			698-723
STUDENT REPORTS						
Percent of students reporting they eat lunch with students of other racial groups:						
"Never"	33.1	30.7	2.4	36.1	30.3	5.8
"Some of the time"	23.8	26.3	-2.5	26.2	26.8	-6.0
"Most of the time"	13.8	13.6	0.2	14.1	13.6	0.5
"All of the time"	29.3	29.4	-0.1	29.2	29.4	-0.2
Total	100.0	100.0		100.0	100.0	
Average number of student's four closest friends who are of a different race	0.86	0.84	0.02	0.88	0.84	0.04
(N)			480-518			480-518

Figures may not sum due to rounding. Parental reports are for students in grades 1-7 at baseline in 1998; student reports are for grades 4 and higher in 2000. Percentages are weighted; N is the actual number of observations. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed tests conducted.

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Table 7 – Special Needs, Washington DC

	Scholarship Offer			School		
	Offer	No Offer	Impact	Private	Public	Impact
	(1)	(2)	(3)	(4)	(5)	(6)
Percent of parents reporting child has:						
A learning disability	11.3	11.3	0.0	11.2	11.3	-0.1
Difficulty understanding English well	4.8	4.2	0.6	5.6	4.0	1.6
A physical disability	3.7	4.0	-0.3	3.3	4.0	-0.7
(N)			715-719			715-719
Percent who say school is doing "very well" in meeting student's special need:						
A learning disability	19.2	14.2	5.0	27.8	14.2	13.6
Difficulty understanding English well	71.6	30.4	41.2*	100.0	0.0	100.0
A physical disability	21.4	38.0	-16.6	11.0	38.0	-27.0
(N)			20-71			20-71

Figures may not sum due to rounding. Percentages are weighted; N is the actual number of observations for parents with children in grades 1-7 at baseline in 1998. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed tests conducted.

Table 8 – School Climate, Washington DC

	Effect of Scholarship Offer			Effect of Going Private		
	Offer	No Offer	Impact	Private	Public	Impact
	(1)	(2)	(3)	(4)	(5)	(6)
Parents who believe the following problems at school are serious:						
Fighting	38.3	47.4	-9.1**	26.1	49.7	-23.6**
Tardiness	43.4	48.3	-4.9	37.2	49.6	-12.4
Destruction of property	29.0	30.6	-2.6	24.4	31.3	-6.8
Truancy	34.3	36.1	-1.8	31.9	36.6	-4.7
Cheating	26.8	27.9	0.8	25.6	27.7	2.1
Guns or other weapons	22.8	23.3	-0.5	22.3	23.4	-1.1
Parents reporting the following rules at their child's school:						
Uniforms	82.4	68.8	13.6***	99.5	65.6	33.9***
Hall passes	78.8	87.8	-9.0***	66.2	90.2	-24.0***
Dress code	91.0	92.2	1.2	89.0	91.9	2.9
Visitors required to sign in	93.2	93.9	-0.7	92.3	94.1	-1.8
(N)			644-710			644-710

Figures may not sum due to rounding. Percentages are weighted; N is the actual number of observations for parents with children in grades 1-7 at baseline in 1998. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed tests conducted.

Table 9 – School Expectations and Homework, Washington DC

	Effect of Scholarship Offer			Effect of Going Private		
	Offer	No Offer	Impact	Private	Public	Impact
	(1)	(2)	(3)	(4)	(5)	(6)
PARENTAL REPORTS						
Hours of homework each day:						
All students	1.3	1.2	0.1*	1.3	1.1	0.2*
Difficulty of homework:						
Too easy	6.5	7.9	-1.4	4.7	8.3	-3.6
Appropriate	85.9	84.5	1.4	87.7	84.2	3.5
Too difficult	4.2	6.2	-2.0	1.6	6.7	-5.1
Total	100.0	100.0		100.0	100.0	
(N)			289-719			289-719
STUDENT REPORTS						
Average number of hours of homework assigned each day:						
All students	1.3	1.1	0.2***	1.4	1.0	0.4***
Students grades 4-6	1.2	1.0	0.2**	1.3	0.9	0.4**
Students grades 7-9	1.4	1.2	0.2*	1.6	1.1	0.5**
Percent of students who agree w/ following:						
"I would read much better if I had more help"						
All students	54.0	43.1	-9.1**	22.6	45.2	-22.6**
Students grades 4-6	36.0	47.6	-11.6*	23.5	50.0	-26.5*
Students grades 7-9	31.0	37.1	-6.1	21.6	38.8	-17.2
"Class work was hard to learn"						
All students	29.6	27.4	2.2	32.4	26.8	5.6
Students grades 4-6	34.7	33.6	1.1	35.9	33.3	2.6
Students grades 7-9	22.0	19.3	2.7	26.4	18.4	8.0
"I had trouble keeping up with the homework"						
All students	21.9	19.1	2.8	25.5	18.5	7.0
Students grades 4-6	23.0	17.4	5.6	29.0	16.2	12.8
Students grades 7-9	20.4	21.3	-0.9	18.9	21.6	-2.7
(N)			200-523			200-523

Figures may not sum due to rounding. Parental reports are for students in grades 1-7 at baseline in 1998; student reports are for grades 4 and higher in 2000. Percentages are weighted; N is the actual number of observations. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed tests conducted.

Table 10 – School-Parent Communications, Washington DC

	Effect of Scholarship Offer			Effect of Going Private		
	Offer	No Offer	Impact	Private	Public	Impact
	(1)	(2)	(3)	(4)	(5)	(6)
Percent for whom following practices exist at child's school:						
Parents receive notes from teachers	86.8	77.6	9.2***	98.1	75.5	22.6***
Parents informed of midterm progress	85.6	77.4	8.2***	96.1	75.4	20.7***
Parents participate in instruction	67.2	59.4	7.8**	77.3	57.4	19.9*
Parents receive newsletter about school	79.6	71.9	7.7**	89.7	70.0	19.7**
Parents notified when child sent to office for first time because of disruptive behavior	86.4	81.4	5.0*	92.5	80.2	12.3*
Parents speak to classes about their jobs	47.8	50.2	-2.4	44.0	50.8	-6.8
Regular parent/teacher conferences held	92.9	93.7	-0.8	91.9	93.9	-2.0
Parent open-houses held at school	95.2	94.6	0.6	96.0	94.4	1.6
Percent of parents who talk with other parents about their child's school at least once a week	30.5	31.5	-1.0	29.2	31.8	-2.6
Average number of parent-teacher meetings attended in the past year	2.4	2.5	-0.1	2.3	2.6	-0.3
Hours parent volunteered in school in the past month	1.6	1.4	0.2	1.9	1.3	0.6
Percent of parents that are members PTA/parent organization	37.5	49.8	-12.3***	21.0	52.9	-31.9***
(N)			553-706			553-706

Figures may not sum due to rounding. Percentages are weighted; N is the actual number of observations for parents with children in grades 1-7 at baseline in 1998. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed tests conducted.

Table 11 -- Parental Involvement with Child's Education, Washington DC

	Effect of Scholarship Offer			Effect of Going Private		
	Offer	No Offer	Impact	Private	Public	Impact
	(1)	(2)	(3)	(4)	(5)	(6)
Percent of parents who participated in the following activities with their children 6 or more times in the past month:						
Discussed experiences at school	75.4	66.6	8.8***	87.5	64.3	23.2**
Helped with math or reading not related to homework	47.0	38.9	8.1**	57.8	36.9	20.9**
Worked on homework	58.1	52.8	5.3	65.2	51.5	13.7
Worked on a school project	25.8	30.0	-4.2	20.2	31.1	-10.9
Attended school activities with child	24.6	22.1	2.5	27.9	21.4	6.5
(N)			689-702			689-702

Figures may not sum due to rounding. Percentages are weighted; N is the actual number of observations for parents with children in grades 1-7 at baseline in 1998. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed tests conducted.

Table 12 – Religious Considerations, Washington DC

	Effect of Scholarship Offer			Effect of Going Private		
	Offer	No Offer	Impact	Private	Public	Impact
	(1)	(2)	(3)	(4)	(5)	(6)
PARENTAL REPORTS						
Percent of parents who:						
Listed religious instruction as the most important factor in choice of school	3.8	2.9	0.9	5.2	2.7	2.5
Attend religious services at least once a week	60.2	67.0	-6.8*	50.7	68.8	-18.1*
Agree strongly that "religious education should be a part of all children's education"	65.9	66.1	-0.2	65.6	66.1	-0.5
Agree strongly that "prayer should be allowed in all schools, public and private, as long as it is voluntary"	69.0	67.4	1.6	71.0	67.0	4.0
Report that they are "very satisfied" with the extent to which students can observe religious traditions in school	21.5	11.5	10.0***	34.1	8.9	25.2***
(N)			682-718			682-714
STUDENT REPORTS						
Percent of students who attended religious services "a lot" in the past year:	37.0	30.0	7.0	45.9	28.1	17.9
Percent of students who received religious instruction "a lot" outside of school in the past year:	23.2	24.3	-1.1	21.8	24.6	-2.8
Percent of students who participated in church youth group activities "a lot" in the past year:	41.6	41.6	0.0	41.6	41.5	0.1
(N)			479-498			479-498

Figures may not sum due to rounding. Parental reports are for students in grades 1-7 at baseline in 1998; student reports are for grades 4 and higher in 2000. Percentages are weighted; N is the actual number of observations. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed tests conducted.

Table 13 – Parental Satisfaction with School, Washington DC

	Effect of Scholarship Offer			Effect of Going Private		
	Offer	No Offer	Impact	Private	Public	Impact
	(1)	(2)	(3)	(4)	(5)	(6)
Percent of parents 'very satisfied' with the following aspects of their child's school:						
Amount of information from teachers	34.4	22.1	12.3***	50.2	19.1	31.1***
Freedom to observe religious traditions	21.5	11.5	10.0***	34.1	8.9	25.2***
Class size	23.3	14.5	8.8***	34.7	12.3	22.4***
Safety	31.4	22.9	8.5***	42.8	20.8	22.0***
Student respect for teachers	29.9	21.9	8.0**	40.6	19.8	20.8**
Teaching of moral values	31.0	23.0	8.0**	41.0	21.0	20.0**
What is Taught	30.2	23.2	7.0**	39.6	21.4	18.2**
Quality of teaching	31.0	24.5	6.5*	39.6	22.9	16.7*
Clarity of school goals	26.1	19.9	6.2*	34.1	18.3	15.8**
Teamwork among school staff	26.2	20.1	6.1*	33.5	18.6	14.9*
Location	39.8	35.6	4.2	45.4	34.6	10.8
Parental support for school	22.6	18.5	4.1	27.9	17.5	10.4
Academic quality	29.2	25.3	3.9	34.2	24.4	9.8
Discipline	24.6	20.8	3.8	29.3	19.8	9.5
Teacher respect for students	26.6	23.4	3.2	30.6	22.6	8.0
Percent of parents identifying the following as the biggest obstacle to their child's performance in school:						
Child's lack of motivation	34.7	26.6	8.1**	45.5	24.5	21.0**
Quality of teachers	9.6	16.7	-7.1**	0.3	18.6	-18.3**
Lack of facilities or programs	22.5	24.6	-2.1	19.7	25.2	-5.5
Lack of discipline in school	8.5	9.4	-0.9	7.3	9.7	-2.4
Problems in child's home or neighborhood	5.7	7.4	-1.7	3.5	7.9	-4.4
Child's friends	17.0	15.3	3.7	23.8	14.2	9.6
Total	100.0	100.0		100.0	100.0	
Overall Grade parent gave school:						
A or B	70.3	62.5	7.8**	80.8	60.4	20.4**
C	24.0	27.4	-3.4	19.2	28.3	-8.9
D or F	5.7	10.1	-4.4**	0.0	11.2	-11.5**
Total	100.0	100.0		100.0	100.0	
Average grade parent gave school (4.0 Scale)	2.8	2.7	0.1*	3.0	2.7	0.3**
(N)			536-721			536-721

Figures may not sum due to rounding. Percentages are weighted; N is the actual number of observations for parents with children in grades 1-7 at baseline in 1998. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed tests conducted.

Table 14 – Student Adjustment and Satisfaction, Washington DC

	Effect of Scholarship Offer			Effect of Going Private		
	Offer	No Offer	Impact	Private	Public	Impact
	(1)	(2)	(3)	(4)	(5)	(6)
Percent of students who report:						
They would give their school the grade "A"						
All students	41.6	37.0	4.6	47.3	36.0	11.3
Students grades 4-6	**57.2**	**46.9**	**10.3***	**68.1**	**45.1**	**23.0**
Students grades 7-9	**16.4**	**23.0**	**-6.4**	**6.5**	**25.1**	**-18.6**
They like going to school each day *"a lot"*						
All students	42.7	34.2	8.5**	53.3	32.2	21.1**
Students grades 4-6	52.0	40.2	11.8**	64.4	38.1	26.3**
Students grades 7-9	28.0	25.7	2.3	31.8	24.9	6.9
"Rules for behavior at my school are strict"						
All students	74.3	66.2	8.1*	83.5	64.2	19.3*
Students grades 4-6	71.7	70.0	1.7	73.5	69.7	3.8
Students grades 7-9	77.9	61.3	16.3**	100.0	56.3	44.2**
"Students are proud to attend my school"						
All students	63.2	63.3	-0.1	63.0	63.3	-0.3
Students grades 4-6	72.7	70.4	2.3	75.1	69.9	5.2
Students grades 7-9	49.3	53.7	-4.4	42.3	55.1	-12.8
"I often feel made fun of by other students"						
All students	31.7	23.3	8.4**	39.3	21.5	17.8*
Students grades 4-6	37.6	30.2	7.4	45.1	28.9	16.2
Students grades 7-9	20.4	14.3	6.1	29.9	12.3	17.6
"Teachers are interested in students"						
All students	85.9	84.5	1.4	87.4	84.2	3.2
Students grades 4-6	**84.8**	**88.7**	**-3.9**	**80.8**	**89.4**	**-8.6**
Students grades 7-9	**87.6**	**79.1**	**8.5**	**99.9**	**76.4**	**23.5**
(N)			195-536			195-536

Figures may not sum due to rounding. Percentages are weighted. N is the actual number of observations for students in grades 4 and higher in 2000. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed tests conducted. Cohort effects in bold are significantly different from each other at the $p < 0.1$ level.

Table 15 – Student Attendance Patterns, Washington DC

	Effect of Scholarship Offer			Effect of Going Private		
	Offer	No Offer	Impact	Private	Public	Impact
	(1)	(2)	(3)	(4)	(5)	(6)
Percent of students suspended for disciplinary reasons during the 1999-2000 school year						
All students	11.7	7.4	4.3*	17.2	6.3	10.9*
Students grades 4-6	10.4	4.7	5.7**	16.6	3.7	12.9*
Students grades 7-9	15.6	13.0	2.6	19.8	12.1	7.7
Percent of students who attended the same school for the entire 1999-2000 school year	91.1	91.4	-0.3	90.3	91.4	-0.9
Average number of days in the past month student was absent from school	1.2	1.0	0.2*	1.5	1.0	0.5*
Average number of days in the past month student was more than a half hour late for school	1.3	1.1	0.2*	1.5	1.1	0.5*
Average length of commute to school (in minutes)	19.7	20.2	-0.5	19.1	20.4	-1.3
(N)			678-729			678-729

Figures may not sum due to rounding. Percentages are weighted; N is the actual number of observations for parents with children in grades 1-7 at baseline in 1998. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed tests conducted.

Table 16 – Students Changing Schools, Washington DC

	Effect of Scholarship Offer			Effect of Going Private		
	Offer	No Offer	Impact	Private	Public	Impact
	(1)	(2)	(3)	(4)	(5)	(6)
Percent of non-graduating students who plan to attend the same school next year:	77.6	82.1	-4.5	72.5	83.1	-10.6
Percent of parents identifying the following as the most important reason for the change:[1]						
Quality of school unacceptable	8.4	4.6	3.8*	12.6	3.7	8.9*
Child admitted to preferred private school	3.6	1.4	2.2*	6.1	0.9	5.2*
Family moving away from school	3.4	2.4	1.0	4.5	2.1	2.4
School in inconvenient location	1.0	1.2	-0.2	0.8	1.3	-0.5
Want all children in the same school	0.8	1.0	-0.2	0.6	1.0	-0.4
School too expensive	0.6	0.7	-0.1	0.5	0.8	-0.3
Child admitted to preferred public school	0.3	1.1	-0.8	0.0	1.3	-2.0
Child was asked not to return	0.6	0.3	0.3	0.9	0.2	0.7
Parent did not answer question	3.9	5.3	-1.4	2.3	5.6	-3.3
(N)			629			629

Figures may not sum due to rounding. Percentages are weighted; N is the actual number of observations for parents with children in grades 1-7 at baseline in 1998. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed tests conducted.

[1] Percentages are in terms of the total population who reported whether or not their child plans to attend the same school.

Table 17 – Student Tolerance and Extracurricular Participation, Washington DC

	Effect of Scholarship Offer			Effect of Going Private		
	Offer	No Offer	Impact	Private	Public	Impact
	(1)	(2)	(3)	(4)	(5)	(6)
Percent of students saying that people whose views they oppose should "definitely" be able to:						
Give a speech in their community	26.0	19.3	6.7*	34.2	17.8	16.4*
Live in their neighborhood	36.7	28.5	8.2**	46.8	26.6	20.2**
Run for president	28.7	21.4	7.3*	37.3	19.8	17.5*
Percent of students who participated in the following activities "a lot" in the past school year:						
Sports, exercise, or gymnastics						
All students	38.7	25.2	13.5***	56.4	21.7	34.7***
Students grades 4-6	38.1	29.3	8.8	48.6	27.3	21.3
Students grades 7-9	39.4	19.8	19.6***	69.1	13.5	55.6***
Art, music, or dance lessons						
All students	30.8	22.6	8.2**	41.4	20.5	20.9**
Students grades 4-6	31.9	24.3	7.6	40.6	22.7	17.9
Students grades 7-9	29.3	20.5	8.8	42.7	17.7	25.0
Team sports						
All students	31.9	27.2	4.7	28.0	26.0	12.0
Students grades 4-6	35.1	26.4	8.7	44.7	24.6	20.1
Students grades 7-9	27.3	28.2	-0.9	25.8	28.5	-2.7
Scouting						
All students	12.7	17.1	-4.4	6.9	18.3	-11.4
Students grades 4-6	12.9	21.6	-8.7*	3.2	23.6	-20.4*
Students grades 7-9	12.4	11.5	0.9	13.7	11.2	2.5
(N)			207-529			207-529

Figures may not sum due to rounding. Percentages are weighted; N is the actual number of observations for parents with children in grades 1-7 at baseline in 1998. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed tests conducted.

Table 18 –Program's Impact on African-American Student Test Scores, Washington DC

	Impact of Offer (Percentiles)	Impact of Private-School Attendance (Percentiles)
	(1)	(2)
All students		
Math	4.0***	9.9***
Reading	3.3**	8.1**
Overall	3.6***	9.0***
(N)	700	700
Grades 3-6		
Math	4.2***	10.0***
Reading	3.6***	8.6**
Overall	3.9***	9.3***
(N)	490	490
Grades 7-9		
Math	4.1*	12.8*
Reading	2.5	7.8
Overall	3.3*	10.3*
(N)	210	210

Difference between test and control groups in National Percentile Points on Iowa Test of Basic Skills. Estimates of program effects are weighted; N is the actual number of observations for students in 1-7 at baseline in 1998. Grade cohorts based on projected grade in 2000. Statistical controls included for baseline math and reading scores. * = difference significant at $p < .1$, ** = significant at $p < .05$, *** = significant at $p < .01$; two-tailed tests conducted.